Breakout 3: Setting Priorities

(One More Time)

Overall Goal of Breakouts: Fill in the Map

High

Risk

If you make it…it won't matter

ARPA-E Programs

DOE-NE

If you make it…it won't matter

Industry R&D

doesn't exist

Low **Impact** **High**

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CHANGING WHAT'S POSSIBLE
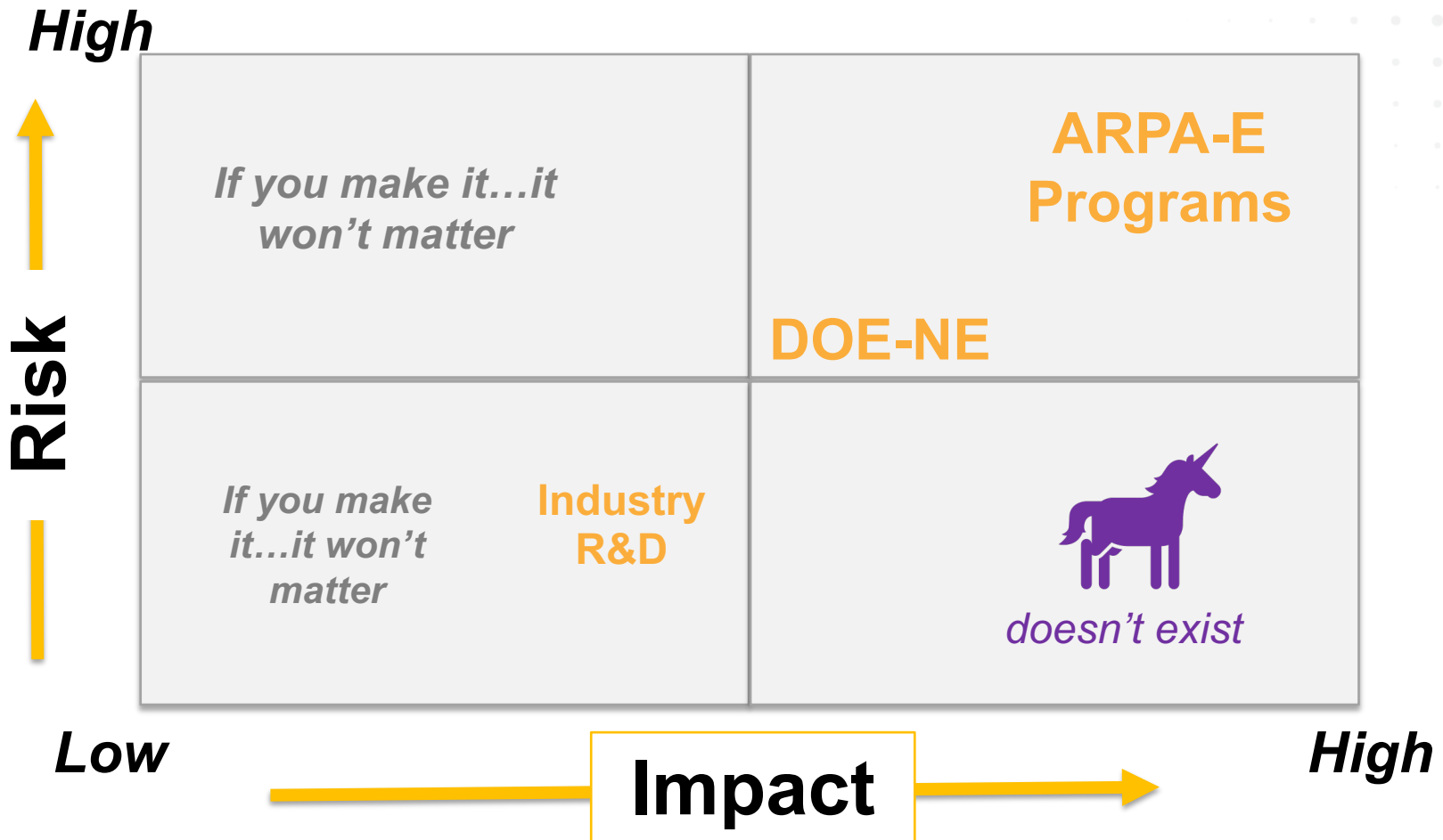
Strawman Program Motivation and Goals

Overall goals:

1. Have a clear understanding of the technical requirements for O&M for several Advanced Reactors

2. Reduce fixed O&M cost from ~13 $/MWh in the current fleet to ~3 $/MWh in the advanced fleet

Most likely path:

1. Translate existing technologies to advanced reactor designs and develop technologies to fill in the gaps

2. Reduce total staffing level from ~750 FTE/GWe to ~50 FTE/GWe

Strawman Program Structure

A program structure could ask each performer team to do one of the following for an advanced reactor design (or even better, a collection of advanced reactor designs):

1. Develop and test the technology to automate one complex maintenance task.

2. Develop and test a plan for APM to reduce the cost and/or time burden of maintenance by 90%.

3. Develop and test the enabling technologies (e.g., sensors, controls, verification and validation approaches) to make reactor control substantially autonomous.

What to Talk About

▸ What does success look like in a 3-year program? How do you measure or set targets for that? Where do we need to get to have a path forward 5 years from now?

▸ Are these the right goals?

▸ What does our map of Risk vs. Impact look like?

▸ Is this the right program structure?

Key Focus Questions

<u>Q1</u>: How would you define success for this program?

<u>Q2</u>: What should the program goals be?

<u>Q3</u>: Which topics should we fund and what would be aspirational targets to hit over the next 3-5 years?

<u>Q4</u>: What program structure would best accomplish the goals?

Some Additional Thoughts

▸ ARPA-E programs are traditionally $30M over 3 years split across 8 to 15 teams.

▸ That's not how they have to look

– We can have phases, with more teams at the start and then a downselect point

– We can hold competitions

– We can have smaller or larger programs

Some Additional Thoughts

RULE: No one is allowed to say "we can't do that because of regulations"

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Now What?

▶ Check breakouts assignment list for which room to go to this time

▶ An ARPA-E facilitator will lead the discussion. Please be respectful and give everyone a chance to contribute.

▶ **Discussions start at 10:00 am**

▶ **Return to this room at 11:30 am for wrap up**

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